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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/758,322	01/15/2004	Georg Mogk	100717-607/ Bayer 10, 268	5385

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EXAMINER
BROWN JR, NATHAN H

ART UNIT	PAPER NUMBER
2121	

DATE MAILED: 03/23/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

	Application No.	Applicant(s)
Office Action Summary	10/758,322	MOGK ET AL.
	Examiner	Art Unit	
	Nathan H. Brown, Jr.	2121	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *(3)* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *15 January 2004*.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-10* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-7 and 10* is/are rejected.

7)☒ Claim(s) *8 and 9* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *15 January 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

Examiner's Detailed Office Action

1. This Office is responsive to application 10/758322, filed January 15, 2004.

2. Claims 1-10 have been examined.

Claim Rejections - 35 USC § 101

3. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

4. Claims 1-6 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. Claims 1-6 are considered to comprise an abstract representation and an algorithm, which do not meet the standard set forth in the State Street Bank case of being tangible, useful, and concrete. In this instance the claims are not considered to be tangible since no real world result is provided. A method for checking whether an input data record is in a working range of a neural network, in the abstract, is not a real world result that has practical application.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the

basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1 and 7 are rejected under 35 U.S.C. 102(b) as being anticipated by *Courrieu*, "Three

Algorithms for Estimating the Domain of Validity of Feedfoward Neural Networks", 1994.

Regarding claim 1. *Courrieu* teaches a method for checking whether an input data record is in a

working range of a neural network, comprising the following steps: (a) storing training input data

records for the neural network (*see* p. 170, col. 1, para. 2, "From an operational standpoint, we

can imagine some very simple solutions, such as calculating the distance between a point of

generalization and the nearest known example…Unfortunately, the above solutions require that

the entire learning set be available…"), forming a convex envelope being formed by means of

the training input data records (*see* p. 170, col. 1, para. 2, "To obtain a more global

estimate…use the hyperrectangle…", *Examiner interprets the hyperrectangle to be a convex*

envelope.), (b) checking whether the input data record is in the convex envelope (*see* p. 170, col.

1, para. 2, "calculation of the distance from a point to the sphere", *Examiner interprets a distance*

from a point to the sphere greater than zero to mean the point is not in a hull polytope (i.e.,

convex envelope) circumscribed by the sphere.).

Regarding claim 7. *Courrieu* teaches a system (see p. 172, §5.1 Computational Experiment,

Examiner interprets "a convergent generator" to be a system.) for determining at least one

predicted value (*see* p. 173, .para. 2, *Examiner interprets a "generalization test point" to be a*

predicted value.), comprising at least one neural network (*see* p. 173, .para. 2, *Examiner*

interprets the set of neural networks produced by the generator to comprise at least one neural

network.) which has been trained using a set of training input data records (*see* p. 173, .para. 2,

Examiner interprets the "64 points taken at random from a uniform distribution in the cube [-

1,1]^3 to be training input data records.), means for checking whether one of the input data record

for the neural network is in the convex envelope which is formed by the training input data

records (*see* p. 173, .para. 2, *Examiner interprets the absolute errors for a generalization test to*

comprise the distances of the input data records from the convex envelope formed by the training

input data, thus one absolute error ≤ 0 implies a check which determines that an input data point

is in the convex hull.).

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness

rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth
in section 102 of this title, if the differences between the subject matter sought to be patented and the prior
art are such that the subject matter as a whole would have been obvious at the time the invention was made
to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be
negatived by the manner in which the invention was made.

8. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over *Courrieu* in view of *Wennmyr*, "A Convex Hull Algorithm for Neural Networks", 1989.

Regarding claim 10. *Courrieu* teaches a method according to claim 1. *Courrieu* does not teach a computer digital storage medium program product for carrying out a method according to claim 1. *Wennmyr* does teach a computer digital storage medium program product for carrying out a method according to claim 1 (see pp. 1481-1482, §V. Stored Information and §VI. Implementation). It would have been obvious at the time the invention was made to persons having ordinary skill in the art to combine *Courrieu* with *Wennmyr* to efficiently obtain the means of deciding whether a given point is inside a convex region (i.e., envelope) by generating the convex region with a time complexity O(N) or O(const) (*see* p. 1478, col. 1, para. 3).

Allowable Subject Matter

9. Claims 8 and 9 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Correspondence Information

Any inquiry concerning this communication or earlier communications from the examiner

should be directed to Nathan H. Brown, Jr. whose telephone number is 571-272- 8632. The

examiner can normally be reached on M-F 0830-1700. If attempts to reach the examiner by

telephone are unsuccessful, the examiner's supervisor, Anthony Knight can be reached on 571-

272-3687. The fax phone number for the organization where this application or proceeding is

assigned is 703-872-9306. Information regarding the status of an application may be obtained

from the Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR. Status

information for unpublished applications is available through Private PAIR only. For more

information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions

on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-

9197 (toll-free).

Anthony Knight
Supervisory Patent Examiner
Tech Center 2100

Nathan H. Brown, Jr.
February 24, 2006